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NPIC/TSSG/ESD/TEB-3-69
23 January 1969

MEMORANDUM FOR: Chief, Research & Development Branch II, Development
and Engineering Division, TSSG

SUBJECT: Test Material Specifications

REFERENCES: a. Memorandum NPIC/TSSG/DED-1454-68, dated
16 December 1968
b. Memorandum NPIC/TSSG/DED-1405-68, dated
25 October 1968
c. Data on Resolution Targets

1. INTRODUCTION:

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1.1. The High Precision Stereo Comparator is being furnished by [redacted]
[redacted] with the optical components subcontracted to [redacted]
[redacted]. It is intended that the optical portion of
the High Precision Stereo Comparator be tested with the same test materials
[redacted] California; and here at NPIC. Reference (a) requested
that TEB both specify and furnish the necessary test materials. Reference
(b) is an independent request to EDL for fabrication of a custom anamorphic
test grid.

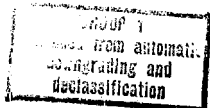
1.2. About half of the tests called for in reference a. can be done
using the custom grid specified in reference b. TEB recommends using this
grid as noted below rather than design a new one. The test materials to be
used for the remaining tests are also noted below.

2. MATERIALS SPECIFIED BY TEB:

2.1. Resolution target USAF 1951 film positive at a reduction factor
of more than 200X is specified. This item is to be used for paragraph 3.a.
of Reference (a).

2.2. The custom grid on glass of reference b. is specified. Four sizes
(1.5", 1.0", 0.5", and 1/6") are specified. This item is to be used for
paragraphs 3.b., 3.c., 3.d., 3.e., and parts of 3.g. of Reference (a).

2.3. Stage micrometers Ealing Corp. Cat. No. 11-7812 and 11-7846 are
specified. These are to be used for parts of paragraphs 3.f. and 3.g. of
Reference (a).



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2.4. A distortion target consisting of a hexagonal array of dots is specified. This item is to be used for paragraph 3.f. of Reference (a).

25X1 2.5. The concentric circle eyepiece reticle specified (unofficially) by [] of DED is to be used for parts of paragraphs 3.e. and 3.g. of Reference (a).

2.6. No test material is furnished or specified for checking out the computer program accuracy. Reference (a) states that the contractor requested the test materials prior to 20 January 1969 and that the optical subcontractor has many tests to perform. Since the subcontractor will not have the computer program to use, this test material is not really needed by 20 January 1969.

2.7. Due to the press of work for other projects, TEB will not spend time on paragraph 4 of Reference (a) at this time.

3. MATERIALS BEING SUPPLIED BY TEB

3.1. Two each film positives of USAF 1951 resolution target reduced more than 240X. See Reference (c).

3.2. Two each on glass of four sizes of the anamorphic custom grid.

3.3. One each of the two sizes of stage micrometers.

3.4. Two each on glass of the distortion grid.

3.5. Two each on glass of the eyepiece reticles.

3.6. One magnification device which will hold targets on one inch square substrates at an optical path length of ten inches from the eye.

4. Within the time available for this portion of the High Precision Stereo Comparator project the above specifications and recommendations represent TEB's best thinking. Should new ideas or approaches with significant technical merit come to the attention of TEB they will, of course, be properly incorporated. This will be despite the desire for all three sets of tests to use the same test materials.

[]
NPIC/TSSG/ESD/TEB

Attachment:
Reference (c)

Distribution:
Orig. & 1 -- NPIC/TSSG/ESD/TEB
2 -- NPIC/TSSG/DED
1 -- NPIC/TSSG/ESD

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